

8/0000/63/000/000/0229/0234

ACCESSION NR: AT401056

AUTHOR: Veselkin, A. P.; Yegorov, Yu. A.; Panov, Ye. A.

TITLE: The passage of Gamma-radiation through a flat slit in shielding

SOURCE: Voprosy⁺ fiziki zashchity⁺ reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 229-234

TOPIC TAGS: nuclear reactor, reactor shielding, Gamma ray propagation, Gamma ray attenuation, radiation shielding, shielding structure, lead shielding, steel shielding, plexiglass shielding

ABSTRACT: The authors studied the weakening effects exerted on radiation shielding by slits and discontinuities (heterogeneities), noting that existing formulas and techniques for computing the passage of radiation through slits and vacuums are applicable only if certain accepted limitations are fulfilled and in no case encompass the entire variety of possible slit and vacuum forms. As a source of γ -radiation a linear isotropic Co^{60} source was employed, which was simulated by the forward movement of an isotropic point source (See Fig. 1. in the Enclosure). The dose was measured by a scintillation γ -dosimeter. During

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the experiment, the dose intensity was measured over a length of 160 mm along the shielding in a direction perpendicular to the slit. The authors investigated the dependence of the dose intensity behind a slitted shielding on the properties of the material used to fill the slit as well as on the properties of the materials of the shielding itself. As shielding materials, lead and steel were selected, while steel, titanium, aluminum, carbon (graphite with a density of 1.65 g/cm³) and organic glass (plexiglass) were used to fill the slit. In all measurements, the thickness of the shielding was 120 mm and the height of the slit - 20 mm. As expected, the intensity of the dose behind the shielding rises sharply as the specific gravity of the material filling the slit decreases. Thus, for example, when steel is replaced by aluminum, the dosage intensity opposite the center of the slit increases by a factor of 6.5. Explanations for this fact are advanced, and the concept of the specific dose (that is, the dose per unit length behind the shielding - $D_1 = \frac{D}{s}$, where D_s is the integral value of the dose of

gamma-radiation behind a slotted shielding; and l is the distance along the shielding within which the dose was measured) is introduced in order to shed light on certain observed laws. A graph is presented which shows a comparison of the degrees of weakening for different

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materials used to fill the slit (See Fig. 2. in the Enclosure). The ordinate shows the ratio D_1/D (D is the specific dosage behind a continuous or unbroken shielding), while the density of the material filling the slit (g/cm^3) is indicated along the abscissa. The result permits a determination of the degree to which the shielding is weakened by the presence of a slit filled by any material, provided the dosage behind a continuous (unbroken) shielding (or behind a slitted shielding for any single slit material) is known. This method and certain variations of its application are analyzed. Orig. art. has: 1 formula and 8 figures.

ASSOCIATION: none

SUBMITTED: 14Aug63

SUB CODE: NP

DATE ACQ: 27Feb64

NO REF SOV: 001

ENCL: 02

OTHER: 003

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ACCESSION NR: AT4019056

ENCLOSURE: 01

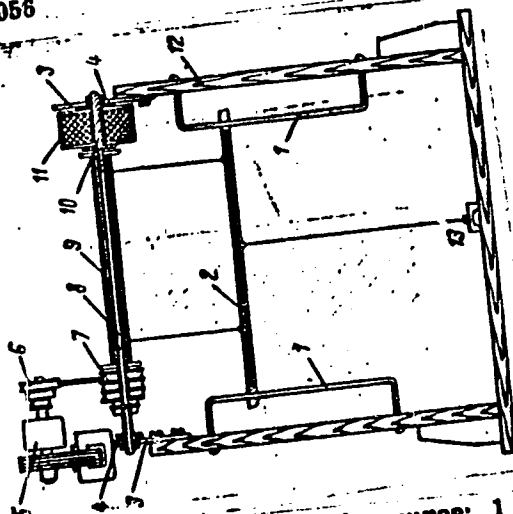


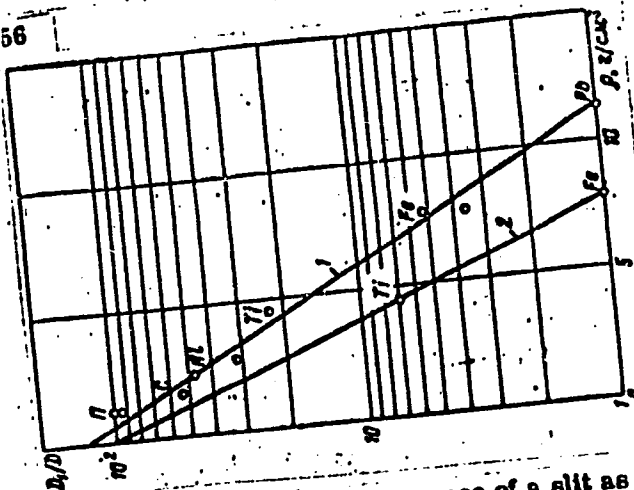
Figure 1.

Schematic drawing of the device for moving the source: 1 - guides; 2 - rod with source; 3 - brackets; 4 - bearings; 5 - SD-2 motor; 6 & 7 - pulleys; 8 - shaft; 9 - coil; 10 - armature of electromagnetic sleeve; 11 - electromagnet; 12 - stand; 13 - switch

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ACCESSION NR: AT4019056

ENCLOSURE: 02



Degree of weakening D_1/D of shielding by the presence of a slit as a function of the specific gravity of the material used to fill the slit: 1 — lead shielding; 2 — steel shielding; 0 — calculated values for steel, concrete and water; τ — plexiglass; C — graphite ($\rho = 1.6 \text{ g/cm}^3$)

Cord 5/5

L 41039-66 EWT(m)

ACC NR: AP6013731

(A) SOURCE CODE: UR/0089/66/020/004/0344/0345

AUTHOR: Zharkov, V. P.; Panov, Ye. A.

ORG: none

TITLE: The inleakage of radiation in cylindrical channels and plane slits in the shielding

SOURCE: Atomnaya energiya, v. 20, no. 4, 1966, 344-345

TOPIC TAGS: ¹⁹radiation ~~shielding~~, radiation intensity

ABSTRACT: The inleakage of radiation is discussed for the case of cylindrical channels and plane slits in the shielding. It depends on the part of the source located beyond the inlet cross section of the channel or slit. In deriving the appropriate equations, it is assumed that the radiation attenuation in the shielding is exponential. The analysis shows that within the limits of validity of the newly derived formulas the contribution of the inleakage to the overall radiation flow at the outlet of the channel or slit does not depend on the radius of the channel or the height of the slit but only on the overall thickness of the shield. The theoretical formulas agree well with experimental tests using a plane slit and a linear γ -radiation source perpendicular to the plane of the slit. Orig. art. has: 7 formulas.

SUB CODE: 18/ SUBM DATE: 03Feb65/ ORIG REF: 000/ OTH REF: 000

Cordl/L

UDC: 539.122:539.121.72

84233

S/089/60/009/004/013/020
B006/B070

26.2241

21.1700

AUTHORS:

Dulin, V. A., Kazanskiy, Yu. A., Mashkovich, V. P.,
Panov, Ye. A., Tsypin, S. G.

TITLE:

Investigation of the Attenuation Functions for Water Exposed
to Isotropic and Highly Collimated Sources of Fission
Neutrons

19
PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 4, pp. 315 - 317

TEXT: In this "Letter to the Editor", the authors report on an experimental investigation of the space distribution of fission neutrons in water, the source of neutrons being a BP-5 (BR-5) reactor. The neutrons came out of a hole in a concrete shield (diameter 250 mm) and fell on a tank (137-139-217 cm) filled with doubly distilled water. The neutron beam had a total angular divergence of $\sim 5^\circ$. The neutrons were detected by proportional boron counters. Measurements could be made at each point of the tank, and the position of the point could be determined with an accuracy of 1 mm. Fig. 1 shows the geometry. Figs. 2 and 3 show the measured neutron distributions for different values of r (distance from

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Investigation of the Attenuation Functions for ⁸⁴²³³Sr/089/60/009/004/013/020
Water Exposed to Isotropic and Highly
Collimated Sources of Fission Neutrons B006/B070

the source) and different values of h (distance from the beam). Fig. 4 shows the attenuation function of neutrons of an isotropic point source multiplied by r^2 (curve a), and the attenuation function of a highly collimated plane source (b). The maximum error of the curve a occurs for small r (r = 40 cm, ~20%), and the minimum error (~5%) occurs for large r. The error of the curve b is between ~5% for r = 40 cm and ~20% for r = 140 cm. The two curves diverge from each other by about 20%, but this is within the limits of the error of measurement. Therefore, for thicknesses of water shield larger than 40 cm, the two curves may be considered to be coincident. Fig. 5 shows, for comparison, the experimentally obtained (Ref. 2) attenuation functions for neutrons of an isotropic disk source (diameter 71.2 cm). The attenuation functions according to which the curves are drawn read:

$$G_{\text{point}}(r) = C_1 \int_0^{\pi/2} N(r, \theta) \sin \theta d\theta; \quad G_{\text{plane}}(r) = C_2 \int_0^{\infty} N(r, h) h dh; \text{ and}$$

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B006/B070

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AUTHORS:

Dulin, V. A., Mashkovich, V. P., Panov, Ye. A., Tsypin, S. G.

TITLE:

Energy Distribution of Fast Fission Neutrons in Water

PERIODICAL:

Atomnaya energiya, 1960, Vol. 9, No. 4, pp. 318 - 319

TEXT: The authors report on an experimental investigation of the energy distribution in water of fission neutrons from SP-5 (BR-5) reactor. The experimental arrangement is described in Ref. 5. The fast neutrons were detected by threshold indicators which had the form of disks of a diameter of 35 mm and different thicknesses. Data referring to these indicators are given in a table. The disks were oriented at different angles θ with the direction of the incident neutron beam, and placed at different distances h from the beam. Fig. 1 shows the activity of the indicators as a function of θ for $r = 30$ cm (normalized at $\theta = 90^\circ$). Fig. 2 shows the activity of phosphorus indicators as a function of h for $r = 30$ cm, and $r = 60$ cm (normalized at $h = 0$). Fig. 3 shows the energy distribution of neutrons in water at distances of 30 and 60 cm, calculated from the geometry of the experiment for a point source. The neutron

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Energy Distribution of Fast Fission Neutrons in Water 81231
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spectrum is obtained from a solution of the system of equations $N_i(r)$

$$= c\varepsilon_i [1 - \exp(-\lambda_i T)] \cdot \exp(-\lambda_i t) \int_{E_{t_i}}^{\infty} \Phi(r, E) \sigma_i(E) dE$$

$$= c\varepsilon_i [1 - \exp(-\lambda_i T)] \exp(-\lambda_i t) \sum_{j=1}^n \Phi_j(r, E) \sigma_{ij}(E) \Delta E_j \text{ by the method of}$$

successive approximations. Here, $N_i(r)$ denotes the activity of the i-th threshold indicator at a distance r from the source after irradiating the indicator for a time T and then waiting for a time t; ε_i is the efficiency of the recording of the activity of the indicator including the correction for absorption and scattering in the sample, air, and counter window; $\sigma_i(E)$ is the reaction cross section at energy E; $\Phi(r, E)$ is the differential neutron flux of energy E at a distance r from the source; c is a constant; i is the index of the indicator (i = 1, 2, ... n); and j is the index of the

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YEGOROV, Yu.A.; PANOV, Ye.A.

Measuring the dosage of gamma-radiation with a scintillation
dosimeter. Inzh.-fiz.zhur. 4 no.8:130-131 Ag '61. (MIRA 14:8)
(Gamma rays) (Scintillation counters)

29598

S/120/61/000/004/007/034
E032/E514

216000

AUTHORS: Yegorov, Yu.A. and Panov, Ye.A.

TITLE: A scintillation gamma-dosimeter

PERIODICAL: Pribery i tekhnika eksperimenta, 1961, No.4, pp.57-58

TEXT: The present authors have developed a dosimeter whose indications are independent of the energy of the incident γ -rays. The scintillator is of the composite form shown in Fig.1 in which 1 is a plastic block (polystyrene + terphenyl + POPOP), 2 is a CsI/Tl crystal and 3 is a plug made of the same material as the plastic scintillator. The block 1 is in the form of a cylinder (50 mm long); the volume of the CsI(Tl) crystal is $\sim 1.5 \text{ cm}^3$. Optical contact is ensured by a layer of vaseline oil. Fig.2 shows the sensitivity of the dosimeter as a function of the incident γ -ray energy (MeV). The composite scintillator is mounted on a $\Phi 37-29$ (FEU-29) photomultiplier and is surrounded by a suitable reflector. The output of the photomultiplier is fed into the circuit shown in Fig.3. The sensitivity ranges are 0.3, 1.5, 7.5, 30, 150, 750, 3000 $\mu\text{r/sec}$. The accuracy is of the order of 5%. The zero can be established by means of the 3 M Ω

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A scintillation gamma-dosimeter

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E032/E514

resistor in the grid of the right-hand side of the 6H9C (6N9S) double triode. In order to prevent zero drift, the d.c. amplifier supplies are derived from a stabilized power pack. Experiments showed that the zero drift does not exceed 0.002 μ r/sec. The probe is connected to the control box by a 25 m lead. The scintillation γ -dosimeter is being used in studying the shielding properties of materials. There are 3 figures and 2 Soviet references.

SUBMITTED: October 22, 1960

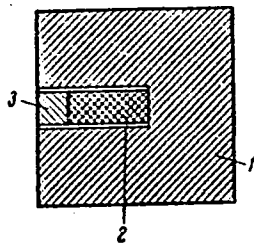


Fig. 1

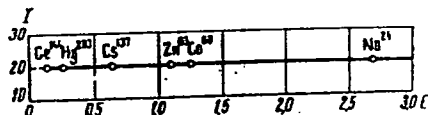


Fig. 2

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B125/B201

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AUTHORS: Yegorov, Yu. A., Panov, Ye. A.

TITLE: Measurement of the dose rate of gamma radiation by a scintillation dosimeter

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 130-131

TEXT: The sensitivity of a scintillation counter with an inorganic scintillator, e.g., with NaI(Tl) or CsI(Tl) crystals, rises with a drop of gamma-quantum energy. This justifies the assumption that a scintillation dosimeter with combined scintillator (consisting, e.g., of an organic plastic scintillator and an inorganic crystal) is independent of rigidity in a sufficiently wide range of gamma-quantum energies. The organic plastic scintillator (on the basis of polystyrene with addition of terphenyl and ROPOR) used in these experiments was 50 mm in both diameter and height. This scintillator was fastened with Vaseline oil onto an $\Phi 39$ -29 (FEU-29) photomultiplier, the mean current strength of which was amplified by a d-c amplifier and measured by a microammeter. Curve a of

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Measurement of the dose rate...

Fig. 1 was found for sensitivity as a function of the gamma-quantum energy, in the course of irradiation of the plastic scintillator by gamma radiation of the sources Ce^{141} ($E_\gamma = 140 \text{ kev}$), Cs^{137} ($E_\gamma = 661 \text{ kev}$), Hg^{203} ($E_\gamma = 280 \text{ kev}$), and Zn^{65} ($E_\gamma = 1120 \text{ kev}$). Using the same gamma-radiation sources, also the energy dependence of the sensitivity of the instrument was determined for an inorganic CsI(Tl) crystal. In this case, sensitivity rises with a drop of gamma-quantum energy (Fig. 1, Curve *b*). These curves *a* and *b* were normalized for a gamma-quantum energy of 1120 kev. A comparison between *a* and *b* shows that the effect of gamma-quantum energy upon the sensitivity of the instrument can be eliminated by a simultaneous use of a plastic scintillator and a CsI(Tl) crystal with a photomultiplier. By placing variously sized, small CsI(Tl) crystals into a cavity in the plastic scintillator it was possible to choose a ratio between the volume of the plastic scintillator and that of the CsI(Tl) crystal such that the dependence of the sensitivity of the instrument upon the gamma-quantum energy was characterized by a straight line in the gamma-quantum energy range from 140 kev to 1.120 Mev. The volume of the CsI(Tl) crystal

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Measurement of the dose rate...

amounted to $\sim 1.5 \text{ cm}^3$. When the gamma-quantum energy was augmented to 2.76 Mev (Na^{24}), the energy dependence of sensitivity was conserved. This dependence was also checked by measuring the given dose rate of gamma radiation from sources with a complicated gamma spectrum (Cs^{134} and Ag^{110}). The measured dose rate corresponded exactly to calculations, i.e., these measurements also confirmed the sensitivity of the dosimeter to be independent of the gamma-quantum energy. When using a scintillator composed of a plastic scintillator (volume $\sim 65 \text{ cm}^3$) and a CsI(Tl) crystal (volume 1.5 cm^3) it is possible to construct a scintillation dosimeter being independent of rigidity. There are 1 figure and 2 Soviet-bloc references.

SUBMITTED: October 25, 1960

Card 3/4

YEGOROV, Yu.A.; PANOV, Ye.A.

Scintillation gamma dosimeter. Prib. i tekhn. eksp. 6 no.4:
57-58 J1-Ag '61. (MIRA 14:9)

(Scintillation counters)

TSIKERMAN, L.Ye.; PANOV, Ye.I.; NAUMOV, A.P.; PROFERANSOV, V.P.

Methods and instruments for checking the anticorrosive insulation
of underground pipelines. Gaz. prom. no.3:11-15 Mr '57.
(MIRA 12:3)

(Pipelines--Equipment and supplies)
(Insulating materials)

PANOV, Y. I.

18(7)16(7) PHASE I BOOK EXPLOITATION SOV/2246

Zashchita podzemnykh metallicheskikh sooruzheniy ot korrozii i sprevedeniya. (Protection of Underground Metal Structures From Corrosion and Deviation). Moscow, Izdatel'stvo M.-va komsomol'nogo khoz. RSPSR, 1959. 783 p. Strada clip inserted. 6,000 copies printed.

Ed.: M.I. Rybtsaev. Ed. of Publishing House: V.G. Akatova. Tech. Ed.: Ye. S. Petrovskaya.

PURPOSE: This collection of articles is intended as a manual on corrosion protection of underground metal structures.

COVERAGE: The book is divided into four parts. The first part gives information on the characteristics of underground metal structures and sources of stray currents. The second part deals with the theory of stray current corrosion and the theory of corrosion of metal structures from stray current. The third part deals with the problem of detecting leakage from sources of stray current. The fourth part deals with methods of preventing corrosion of underground metal structures and gives the basic operating principles of equipment involved. No personalities are mentioned. References follow

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Protection of Underground Metal (Cable)

SOV/2246

Ch. VIII. Investigation and Measurement of Corrosion (Methods, Instruments, and Auxiliary Equipment)

350

I. Methods of investigation and measurement of corrosion (K.K. Nikol'skiy)

350

1. Determining corrosiveness of soils and water along the route of an underground metal structure

Determining specific resistance of soil (K.K. Nikol'skiy) 351

Bipolar method of determining specific resistance of soils (Ye. I. Panov, Engineer) 356

Determining corrosiveness effect of soils, groundwater, and other water on lead cable sheathing (A.F. Marchenko) 358

Determining corrosiveness of soils on steel (L.Ya. Tsikerman, and Ye. I. Panov) 363

2. Comparing results of an investigation of soil corrosiveness. Mapping soil corrosiveness (Ye. I. Panov)

364

3. Detecting the presence of stray currents in the earth (K.K. Nikol'skiy)

366

4. Measurements taken on underground metal structures (K.K. Nikol'skiy)

367

Measuring potentials in underground metal structures with respect to the earth 367

Card 15/26

Panov. E. A.

"Isomerisation des hydrocarbures non saturés au contact avec les oxydes des métaux.
VI. Isomerisation du 4-phenyl-butène-1 sur l'oxyde de chrome." by R. J. Levina
and E. A. Panov. (p 533)

SO; Journal of General Chemistry (Zhurnal Obshchei Khimii) 1941, Vol 11, No. 7

PANOV, Ye. M.

Cand. Chemical Sci.

"A New Class of the Simplest Organic Compounds of Lead." Sub 22 Jun 51,
Moscow Order of Lenin State U imeni M. V. Lomonosov.

Dissertations presented for science and engineering degrees in Moscow
during 1951.

SO: Sum. No. 480, 9 May 55

PAHOV, E.M.; KOCHESHKOV, E.A.

New fundamental class of simplest organic compounds of lead, ArPbX_3 .
Doklady Akad. Nauk S.S.S.R. 85, 1037-40 '52. (MLRA 5:9)
(CA 47 no.13:6365 '53)

PANOV, E.M.; KOCHESHKOV, K.A.

Metalloorganic analogs of benzoic and p-toluic acids. Doklady Akad.
Bunk S.S.S.R. 85, 1293-5 '52. (MLRA 5:9)
(CA 47 no.14:6887 '53)

KEOMYAKOV, N.M., doktor tekhn.nauk, prof. (Leningrad); PANGOV, V.A.,
kand.tekhn.nauk (Leningrad)

Determination of calculational electric loads for groups of
short-term duration consumers. Elektrichestvo no.3:22-25
Mr '64. (MIRA 17:4)

PPANOV YE M.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 953

Author: Kocheshkov, K. A., and Panov, Ye. M.

Institution: Academy of Sciences USSR

Title: Dearylation of Ar_2PbX_2 as a Method for the Synthesis of a New Class of Compounds ArPbX_3

Original

Periodical: Izv. AN SSSR, Section on Chemical Sciences, 1955, No 4, 711-717

Abstract: Compounds of the type $\text{C}_6\text{H}_5\text{Pb}(\text{OCOR})_3$ ($\text{R} = \text{CH}_3$ (I); $\text{R} = (\text{CH}_3)_2\text{CH}$ (II); $\text{R} = \text{C}_6\text{H}_5$ (III)) have been prepared by the dearylation of organo-lead compounds of the type $(\text{C}_6\text{H}_5)_2\text{Pb}(\text{OCOR})_2$ with mercuric salts in organic acid solutions. The compound I can be prepared from 1.92 gms $\text{Hg}(\text{OCOCH}_3)_2$ in 40 ml glacial CH_3COOH and 2.88 gms diphenyllead diacetate (24 hours at 200°); the $\text{C}_6\text{H}_5\text{HgOCOCH}_3$ which is formed is converted to $\text{C}_6\text{H}_5\text{HgCl}$ by the addition of 1.28 ml of 4.7 N HCl in alcohol, followed by filtration. The filtrate is evaporated in a vacuum-desiccator over KOH. The residue (3.63 gms) is dissolved in 50 ml

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 953

Abstract: ethyl acetate and cooled. The crystals of I are filtered off and washed with hexane. The product is 2.19 gms (79%) phenyllead triacetate, mp 101-102°. The compound II is prepared from $[(CH_3)_2CHCOO]_2Hg$ (prepared from 2.16 gms yellow HgO and 20 ml isobutyric acid) and 5.32 gms diphenyllead diisobutyrate (12 days at 2°); the yield of II is 50.5%, mp 77-78°. The compound III was prepared by dissolving 0.55 gms II in a hot solution of 0.44 gms C_6H_5COOH in 8 ml hexane. The solution is heated to boiling and allowed to crystallize. The precipitate which is formed is filtered off and washed with hot hexane, alcohol, and ether. The residue (0.4 gms) is recrystallized from 1.5 ml absolute C_6H_6 washed with hexane, and dried at 61°; the yield of III is 41.5%, mp 149.5-151°. Phenylplumbic acid (IV) can be prepared by mixing a solution containing 0.27 gms II in 5 ml absolute alcohol with 6 ml 5% NH_4OH . After 24 hours the precipitate which is formed is filtered off, washed with water, alcohol, and ether, and dried in vacuum at 100°; the yield of IV is 88.5%. Compound IV has also been prepared from I. After prolonged reaction with iodine in $CHCl_3$, I and II evolve PbI_2 ; refluxing with water leads to hydrolysis. Hydrolysis also proceeds slowly at 20°. Reaction of II with mercury

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 953

Abstract: diisobutyrate in isobutyric acid yields lead tetraisobutyrate; the yield is 36%, mp 114°.

Card 3/3

PANOV YE. M.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 95⁴

Author: Kocheshkov, K. A., and Panov, Ye. M.

Institution: Academy of Sciences USSR

Title: Compounds of the Type Ar_2PbX_2 and $ArPbX_3$ of the Paratolyl Series

Original

Periodical: Izv. AN SSSR, Section on Chemical Sciences, 1955, No 4, 718-722

Abstract: A method has been developed for synthesizing compounds of the type $Ar_2Pb(OCOR)_2$ (I) from Ar_2Pb in II /Tr. note: II presumably refers to preceding abstract/ ($Ar = p-CH_3C_6H_4$); compounds of the type I with $R = CH_3$ (Ia) and $R = (CH_3)_2CH$ have been prepared. Ia was used in the synthesis of $ArPb(OCOCH_3)_3$ (III), which was converted to p-tolyllead trimethacrylate (IV); 7.5 gms II are gradually dissolved in 75 ml concentrated HNO_3 . The reaction mixture is heated for several minutes and then cooled; the precipitate of $Ar_2Pb(NO_3)_2$ is sucked off, washed with water, and redissolved in 80 ml alcohol and alcoholic KOH (2.2 gms in 25 ml), which results in conversion to Ar_2PbO (V); the yield

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 954

Abstract: is 5.25 gms. When 3.2 gms V are dissolved in 3 ml of glacial CH_3COOH , Ia is obtained; the yield is 64%, mp $209-210^\circ$. A similar method can be used in preparing Ib; yield 48.3%, mp $202-203^\circ$. When 1.2 gms of II are heated for one hour ($120-140^\circ$) with 2.2 gms isobutyric acid, 0.41 gms Ib are produced. For the synthesis of III, 2.5 gms Ia are introduced into a warm solution of 1.59 gms $\text{Hg}(\text{OCOCH}_3)_2$ in 45 ml glacial CH_3COOH ; after 24 hours, 1.9 ml 2.62 N alcoholic HCl are added to the reaction mixture; the yield of $p\text{-CH}_3\text{C}_6\text{H}_4\text{HgCl}$ is 86%. The filtrate is stored in a vacuum dessicator over KOH. The incompletely crystallized residue (2-2.2 gms) is crystallized from 6 ml hot ethyl acetate, acidified with a drop of CH_3COOH ; the yield of III is 67%, mp $86-88^\circ$. When the substance is crystallized from C_6H_6 , the crystals contain one mole of the solvent. IV is prepared by adding 0.39 ml methacrylic acid to a solution of 0.36 gms III in 1.5 ml absolute alcohol; the yield is 42%, and the product decomposes above 120° . P-tolylplumbonic acid (VI) is prepared by mixing a solution of 0.5 gms III in 10 ml of absolute alcohol with 12 ml 5% NH_4OH ; the yield is 60%. When VI is refluxed with concentrated HCl, toluene is formed. Reaction of VI with methacrylic acid yields IV.

Card 2/2

PANOV, Ye. M.

AUTHORS:

Lodochnikova, V.I., Panov, Ye.L., Kocheshkov, K.S.

62-12-10/20

TITLE:

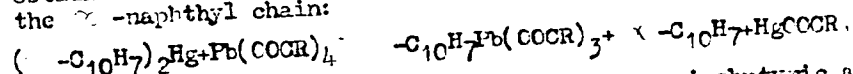
α -Naphthyl Derivatives of the Class $ArPbX_3$ (α -Naftil'nyye proizvodnyye klassa $ArPbX_3$).

PERIODICAL:

Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1484-1486 (USSR)

ABSTRACT:

On the basis of investigations already carried out 5,6 by two different methods for the purpose of obtaining lead-organic compounds of the class $ArPbX_3$, the authors, by one of these methods, obtained a number of hitherto not investigated compounds also in the α -naphthyl chain:



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where $COOR$ represents the remaining of acetic or isobutyric acid. With the action of ammonia on the triacetate, acid was obtained, and by overacidification the triacetate was converted into tribenzoate. The α -naphthyl derivatives of the class $ArPbX_3$ are slightly yellow substances, soluble in organic solvents, but not by means of hydrolysis. There are 7 references, 3 of which.

α -Naphthyl Derivatives of the Class ArFX,
are Slavic.

62-12-10/20

ASSOCIATION: Physical-Chemical Institute imeni L.Ya.Karpov and State Medical
Institute Sverdlovsk (Fiziko-khimicheskiy institut im.
L.Ya.Karpova i Sverdlovskiy gosudarstvennyy meditsinskiy institut).

SUBMITTED: July 5, 1957

AVAILABLE: Library of Congress

Card 2/2 1. α -Naphthyl derivatives

5(2), 5(4)
AUTHORS:

SOV/20-123-2-24/50
Panov, Ye. M., Kocheshkov, K. A., Corresponding Member, AS USSR

TITLE:

The Reaction of Direct Lead Introduction (Reaktsiya
plyumbirovaniya)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 295-297
(USSR)

ABSTRACT:

Although the reaction of the direct introduction of metal atoms into an organic molecule (for Hg Ref 1, for Au Ref 2, and for Tl Ref 3) has been known already for a long time the "leading", i.e. the direct lead introduction has hitherto not been described. The authors investigated the leading as an interaction between salts of organic acids of the 4-valent lead and thiophene. The use of lead tetra-isobutyrate (Ref 5) seemed to be especially well suited for this purpose due to several favorable properties. The leading was observed under the following circumstances: After a smooth dissolution of the lead tetra-isobutyrate in an excess of thiophene a sample taken after several days' standing at room temperature did not show a reaction typical of the presence of 4-valent lead in the hydrolysis. This shows that the lead tetra-isobutyrate is gradually

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The Reaction of Direct Lead Introduction

SOV/20-123-2-24/50

removed. The di- α -thienyl-lead-diisobutyrate can be isolated and identified under the conditions mentioned in the experimental part. It is a white crystalline substance. The probable reactions of its formation are given: first an unstable thienyl-lead-triisobutyrate is formed by a direct reaction of "leading" (I) which further on disproportionates (II). The analysis, the determination of the number of acid groups, and the transformation into the di- α -thienyl-lead-bismono-chloro acetate prove the proposed formula of the compound (II). The place of entrance " α " which is characteristic of thiophene in its metallization by salts of other metals is also proved in the case of lead. Here the process is slowed down considerably as compared to the rapid mercurization and thalliation. In the first footnote on page 295 the authors point out that R. Criegee et al. (Ref 6) had overlooked the discovery and publication of the method of synthesizing the ArPbX_3 class by the authors (Ref 7). There are 9 references, 5 of which are Soviet.

ASSOCIATION: Piziko-khimicheskiy institut im. L. Ya. Karpova (Physical and
Card 2/3 Chemical Institute imeni L. Ya. Karpov)

5 (3)

AUTHORS:

Lodochnikova, V. I., Panov, Ye. M.,
Kocheshkov, K. A.

SOV/79-29-7-32/85

TITLE:

β -Naphthyl Derivatives of the Class $ArPbX_3$ (β -Naftil'nyye
proizvodnyye klassa $ArPbX_3$)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2253-2255 (USSR)

ABSTRACT:

As was proved by M. M. Nad' and K. A. Kocheshkov (Ref 1),
organo-lead compounds of the class Ar_2PbX_2 are formed according
to the scheme $2 Ar_2Hg + Pb(OOCCH_3)_4 \longrightarrow Ar_2Pb(OOCCH_3)_2 +$
 $+ 2 ArHgOOCCH_3$. Among the compounds synthesized by this method
only di- β -naphthyl-lead diacetate which contained a β -naphthyl
group were described in publications. Recently (Ref 2) the
authors found that the same initial reagents, of a molar ratio,
lead to the compounds $ArPbX_3$, which were identical with the
representatives of this class (Ref 3) obtained by another
method. It was of interest to synthesize the salts
 $\beta-C_{10}H_7Pb(OOCR)_3$ according to di- β -naphthyl mercury in order

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β -Naphthyl Derivatives of the Class ArPbX_3

SOV/19-29-1-32/83

to obtain more complete data on the β -naphthyl compounds of lead. In the present paper the triacetate and tripropionate of β -naphthyl lead as well as β -naphthyl plumbic acid were synthesized. It was shown that the latter may serve as an intermediate in the substitution of an organic acid residue by another one. The compounds ArPbX_3 are the first stage of arylation of the salts of organic acids of tetravalent lead according to the above scheme; further they are bound to enter the reaction with Ar_2Hg under the formation of Ar_2PbX_2 .

Ar_2PbX_2 is thus formed in two stages. The triacetate of β -naphthyl lead with di- β -naphthyl mercury yields the diacetate of di- β -naphthyl lead. The same reaction was observed by R. Grigee, P. Dimroth, R. Schempf (Ref 4) in the formation of the diacetate of diphenyl lead. The compounds $\beta\text{-C}_{10}\text{H}_7\text{Pb}(\text{OOCR})_3$ are formed more slowly. They form crystals more difficultly than the corresponding α -naphthyl derivatives which were described earlier by the authors (Ref 5). Acetates are the most convenient lead salts. There are 7 references, 5 of which are

Card 2/3

β -Naphthyl Derivatives of the Class ArPbX_3

SOV/79-29-7-52/83

Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut imeni L. Ya. Karpova i
Sverdlovskiy gosudarstvennyy meditsinskiy institut.
(Physicochemical Institute imeni L. Ya. Karpov and Sverdlovsk
State Medical Institute)

SUBMITTED: June 12, 1958

Card 3/3

20946

S/062/61/000/003/013/013
B117/B208

5 3700 1164
2209
1273
AUTHORS: also 1372

Kocheshkov, K. A., Panov, Ye. M., and Sorokina, R. S.

TITLE: Organolithium vinyl benzenes halogenated in their side chains, and their reactions

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 3, 1961, 532

TEXT: In the present "Letter to the Editor", the authors report that they have been able to obtain organolithium vinyl benzenes halogenated in their side chain at low temperature. The synthesis was achieved by an exchange reaction $CX_2 = CXC_6H_4Br + C_4H_9Li \longrightarrow CX_2 = CXC_6H_2Li + C_4H_9Br$ (X being either F or Cl) in ether, and some of their reactions have been studied. This was exemplified by the following novel conversions of ArLi: 1) carbonization of ArLi gives ArCOOH (Ar denotes $CClF = CFC_6H_4-$), melting point $165^\circ-166^\circ C$. Found: C 49.49; 49.59; H 2.26; 2.32; Cl 16.16; 16.39 %. Calculated: C 49.43; H 2.29; Cl 16.25 %. 2) Reaction of ArLi with $HgBr_2$ yields $ArHgBr$, melting point $221^\circ-223^\circ C$. Found: Hg 44.80 %; the sum of Cl and Br 24.96: X

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X

Organolithium vinyl benzenes halogenated... S/062/61/000/003/013/013
B117/B208

25.18. Calculated: Hg 44.18 %; the sum of Cl and Br 25.40. 3) Reaction of ArLi with $(C_6H_5)_3SnCl$ gives $ArSn(C_2H_5)_3$, boiling point $170^\circ C$ (4 mm). Found: Sn 31.16; 31.15; Cl 9.76; 9.90 %. Calculated: Sn 31.28; Cl 9.36 %. 4) From the reaction with acetaldehyde a corresponding divinyl benzene results, which is halogenated in one of the vinyl groups. Low temperatures (about $-70^\circ C$) were necessary for carrying out the afore-mentioned reactions, as well as reactions with halides of other elements or elemental-organic compounds. This new type of aryl lithium is capable of all the manifold reactions of organolithium compounds. The resultant monomers are polymerizable. It is pointed out that a rise of temperature or retardation of the reaction during the synthesis of the new ArLi type yield polycondensation products of the $(-CX=CXC_6H_4-)$ type which are of special interest to the authors. [Abstracter's note: This is a full translation from the original].

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: January 19, 1961

Card 2/2

ZAYTSEVA, N.A.; PANOV, Ye.M.; KOCHESHKOV, K.A.

Synthesis of fluorinated ketones by use of organolithium compounds
and N, N-dialkylamides of fluorinated acids. Izv.AN SSSR, Otd.khim.
nauk no.5:831-835 My '61. (MIRA 14:5)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
(Ketones) (Lithium organic compounds) (Amides)

30170
S/062/61/000/012/011/012
B117/B147

5 3700

AUTHORS:

Kocheshkov, K. A., Panov, Ye. M., and Zemlyanskiy, N. N.

TITLE:

Stepwise formation of the elementoxane chain in the presence of diazo alkanes

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 12, 1961, 2255

TEXT: In the present "Letter to the Editor", the authors report on the reaction of elemental organic compounds with diazo alkane. They point out that the usually practiced hydrolysis, e.g., of $R_2Sn(OOCR)_2$, results in a mixture of organic tin compounds. In the case examined, an increase of the elementoxane chain takes place whereby, during the individual stages, pure products are isolated and the RCOO end groups are preserved, such as for $(n-C_4H_9)_2Sn(OOCCH_3)_2$. Monomer (boiling point $142^\circ - 145^\circ C$ (100 mm Hg)) \longrightarrow dimer (melting point $58^\circ - 60^\circ C$) \longrightarrow tetramer (melting point $138^\circ - 139^\circ C$) \longrightarrow octamer (decomposition at above $200^\circ C$), etc. The

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S/062/61/000/012/011/012

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Stepwise formation of the...

reaction is shown by the example of two elements (Sn, Pb). The authors concluded, however, that the reaction may be extended to other elemental organic compounds comprising at least two saponifiable groups in the element (e.g., $R_2Si(OOCR)_2$ or $RTl(OOCR)_2$, etc.). With diazomethane:

(a) $2R_2SnX_2$ (I) \longrightarrow $X(R)_2Sn-O-Sn(R)_2X$ (II). (II) is $C_{20}H_{42}O_5Sn_2$ having a molecular weight of 591. (b) $2X(R)_2Sn-O-Sn(R)_2X$ (II) \longrightarrow

$X(R)_2Sn-[O(R)_2Sn]_3-X$ (III). (III) is $C_{36}H_{78}O_7Sn_4$, molecular weight 1109. (c) $2X(R)_2Sn-[O(R)_2Sn]_3-X$ (III) \longrightarrow $X(R)_2Sn-[O(R)_2Sn]_7-X$ (IV).

(IV) is $C_{68}H_{150}O_{11}Sn_8$, molecular weight 2156. In each case, $R = n-C_4H_9$ and $X = OOCCH_3$. (d) $2R_2PbX_2$ (I) \longrightarrow $X(R)_2Pb-O-Pb(R)_2X$ (II). In this case, $R = C_6H_5$ and $X = OOCCH(CH_3)_2$. (II) is $C_{32}H_{34}O_5Pb_2$ decomposition at

$240^\circ C$. (II) was also obtained with diazoethane and diazobutane. [Abstracter's note: Essentially complete translation.] There is 1 Soviet reference.

Card 2/3

33932

S/079/62/032/001/009/016
D202/D302

5.3700
AUTHORS:

Zemlyanskiy, N.N., Panov, Ye.M., and Kochestkov, K.A.

TITLE:

Synthesis of organostannic salts of organic acids

PERIODICAL:

Zhurnal obshchey khimii, v. 32, no. 1, 1962, 291-9.

TEXT: The authors describe a new method of preparing organostannic salts with organic acids by an exchange reaction between organic lead salts and organic halides of tin, stating that this reaction takes place easily with fairly high yields, e.g. $(\text{Bu})_2\text{SnBr}_2 + \text{Pb}(\text{OOC}.\text{C}_3\text{H}_7)_2 \rightarrow (\text{Bu})_2\text{Sn}(\text{OOC}.\text{C}_3\text{H}_7)_2 + \text{PbBr}_2$. The lead salts of liquid organic acids can be obtained by dissolving litharge in the corresponding acid and may be directly used for the reaction; organostannic salts of dicarboxylic acids can be obtained by direct action of the acid on tin tetraethyl. The starting Sn organic chlorides were obtained by usual methods. The authors synthesized 6 known and 3 new compounds and give full details of the procedure. 1) Triethyl tin acetate was obtained in 77.8 % yield by boiling lead acetate

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S/079/62/032/001/009/016

D202/D302

Synthesis of organostannic salts ...

with tetraethyl tin chloride. 2) Tributyl tin acetate from lead acetate and tri-n-butyl tin chloride; yield - 84.5 %. 3) Triethyl tin methacrylate from PbO in methacrylic acid and triethyl tin chloride; yield - 58.7 %. 4) Tri-n-butyl tin methacrylate from PbO in methacrylic acid and tri-n-butyl tin chloride; yield - 99.1 %. 5) Di-n-butyl tin diacetate from lead acetate and di-n-butyl tin bromide; yield 85.4 %. 6) Triphenyl tin acetate from lead acetate and triphenyl tin chloride; yield 84.5 %. Physical constants determined for these products were in very good agreement with data given in literature. 7) Diethyl tin adipate was obtained by heating tetraethyl tin with adipic acid; yield - 90 %; m. p. 143-144°C. The compound is soluble in cold CHCl₃ and in hot benzene, toluene, tylen. di chloroethane and CCl₄. 8) Diethyl tin azelate was obtained by heating tetraethyl tin and azelaic acid. The yield was 79.95 %, m. p. 121-124.5°C. Its solubility is similar to that of the adipate. 9) Diethyl tin sebacate was obtained in the same way from tetraethyl tin and a slight excess of sebacic acid. The yield was 64.9 %, m. p. 122-123°C. Its solubility is similar to that of the above compounds.

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Synthesis of organostannic salts ...

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D202/D302

In the last three products the found amounts of Sn and the acid numbers were in agreement with the calculated ones. There are 12 references: 6 Soviet-bloc and 6 non-Soviet-bloc. The references to the English-language publications read as follows: R. Sasin, J. Org. Chem. 23, 1366, 1958; G. van der Kerk and J. Luijten, J. Appl. Chem., 6, 49, 1956.

ASSOCIATION: Fiziko-khimicheskiy institut imeni L.Ya. Karpova (Physico-Chemical Institute imeni L.Ya. Karpov)

SUBMITTED: January 4, 1961

Card 3/3

S/020/62/143/003/018/029
B110/B138

AUTHORS: Panov, Ye. M., Zemlyanskiy, N. N., and Kocheshkov, K. A.,
Corresponding Member AS USSR

TITLE: Investigation of the element-oxane bond. Lead oxanes

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 3, 1962, 603-605

TEXT: A method is described for the synthesis of compounds with lead oxane bond which may also be used for other elements. The compounds Ar_2PbX_2 and ArPbX_3 (where Ar is the aromatic radical and X is the residue of the organic acid) have low moisture resistance. When left standing in air, their melting point drops and impurities insoluble in organics appear. During recrystallization, even with the freshly precipitated compound, some drops of acid must be added to prevent hydrolysis. From a solution of diphenyl lead diacetate in a mixture of acetone and water, 15-20% of the substance will gradually separate in the form of $(\text{C}_6\text{H}_5)_2\text{Pb}(\text{OH})\cdot\text{OCOCH}_3$.

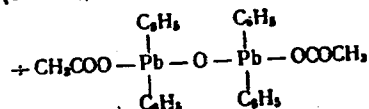
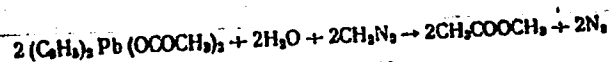
Hydrolysis of $\text{Ar}_2\text{Pb}(\text{OCOR})_2$ in the presence of diazoalkane produces the

lead-oxane bond:

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S/020/62/143/003/018/029
B110/B138

Investigation of the element- ...



After addition of water 1-2 ml ethereal diazoalkane to the acetone solution of $\text{Ar}_2\text{Pb}(\text{OCOR})_2$, tetraphenyl diplumbo-oxane diacetate crystallizes out within a few minutes. Excess diazomethane produces almost quantitative yield. In the same way, tetraphenyl diplumbo-oxane was obtained with a yield of 72%. As the reaction does not take place with dry solvents, the hydrolysis of the organo lead salt is the first reaction phase. Diazomethane does not participate in the synthesis of the final product, but only binds the acid formed during hydrolysis, thus preventing reaction reversal. When heating with organic acids, the lead-oxane bond is broken, and the initial product is re-formed. There are 5 references. The most important reference to English-language publications is: W. T. Reichle, J. Polym. Sci., 49, 521 (1961).

Card 2/3

L 22531-65 EWG(j)/EWT(m)/EPF(c)/RPR/EMP(j)/T/EMA(h)/EMA(1) Pc-Li/Pr-Li/Ps-Li/
Feb RPL RM/WW

ACCESSION NR: AP4047947

S/0020/54/158/005/1120/1122

AUTHOR: Koton, M. M. (Corresponding member AN SSSR); Kocheshkov, K. A. (Corresponding member AN SSSR); Gorshkova, I. A.; Dokukina, A. F.; Panov, Ye. M.

TITLE: Copolymerization of alpha, beta, beta-halosubstituted paradivinybenzenes with styrene

SOURCE: AN SSSR. Doklady*, v. 158, no. 5, 1964, 1120-1122

TOPIC TAGS: halosubstituted paradivinybenzene, copolymerization, styrene paradivinybenzene copolymer, reaction kinetics, radical mechanism, copolymerization, kinetics

ABSTRACT: The copolymerizability of styrene and α, β, β -halosubstituted p-divinybenzenes, containing two vinyl groups of different activity, was studied.

II, and III copolymerized with styrene under emulsion, solution or bulk

Card 1/2

L 22531-65

ACCESSION NR: AP4047947

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polymerization using 0.5% azo-bis-isobutyronitrile as initiator to form copolymers whose composition approximated the original reaction mixture. Styrene copolymerized with IV in the initiated system only when subjected to u. v. irradiation. The copolymerization kinetics were followed by IR and NMR spectral analyses. The rate of copolymerization was 5-6 times slower than the rate of styrene homopolymerization. Unsaturated difluorochlorovinyl bonds were

found in the soluble and the insoluble copolymers. Styrene was graft copolymerized onto the p-divinylbenzene-styrene copolymer at the -CF=CFCl sites. Orig. art. has: 1 figure and 1 table

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy Akademii nauk SSSR (Institute of High Molecular Compounds, Academy of Sciences, SSSR); Leningradskiy politekhnicheskii institut im. M. I. Kalinina (Leningrad Polytechnical Institute); Fizikokhimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute)
SUBMITTED: 28Jun64 ENCL: 00

SUB CODE: 00, 00

NO REF SOV: 005

OTHER: 000

Card 2/2

L 08793-67 EWT(m)/EWP(j) IJP(o) WW/RM
ACC NR: AP6030843 (A, N) SOURCE CODE: UR/0191/66/000/009/0010/0011

AUTHOR: Gel'man, Ya. A.; Zemlyanskiy, N. N.; Lauris, I. V.; Syutkina, O. P.; Kuskova, V. P.; Panov, Ye. M.

ORG: none

TITLE: Stabilization of polyvinylchloride by organotin oxanes

SOURCE: Plasticheskiye massy, no. 9, 1966, 10-11

TOPIC TAGS: vinyl chloride, polymer, tin compound, organotin compound, organometallic compound, solid mechanical property, heat resistance

APPROVED FOR RELEASE: 06/15/2000
ABSTRACT: The effect of organotin compounds, $\text{CH}_3\text{COO}(\text{C}_4\text{H}_9)_2\text{SnO}$, $\text{CH}_3\text{COO}[(\text{C}_4\text{H}_9)_2\text{SnO}]_2$, and $[\text{C}_{11}\text{H}_{23}\text{COO}(\text{C}_4\text{H}_9)_2\text{Sn}]_2\text{O}$ on the thermal stability of polyvinylchloride was investigated. The aging characteristics of the stabilized PVC was tested according to GOST 10226-62 and the decomposition temperature was tested according to the GOST 5960-51 standard. It was found that the PVC stabilized with organotin oxanes had a thermal stability comparable to that of PVC stabilized with conventional R_2PbX_2 stabilizers. It was also found that the organotin oxane stabilizer based on acetic acid was as effective as that based on lauric acid. Orig. art. has: 2 tables.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 004

Card 1/1 not

UDC: 678.743.22:678.048.9

SERGEYEV, N.M.; SHAPET'KO, N.N.; PANOV, Ye.M.; SOROKINA, R.S.

Nuclear magnetic resonance spectra of F^{19} in α,β -difluoro- β -chloro-
styrenes. Teoret. i eksper. khim. 1 no. 5:695-697 S-O '65.
(MIRA 19:1)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva. Submitted February 26, 1965.

SHAPET'KO, N.N.; SERGEYEV, N.M.; FANOV, Ye.M.; SOROKINA, R.S.

Extralong-range spin-spin interaction in the nuclear magnetic
resonance spectrum of F^{19} of para-fluoro- α,β -difluoro- β -chloro-
styrene. Zhur. strukt. khim. 6 no. 48641-643 J1-Ag '65
(MIRA 1961)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova, Moskva.
Submitted November 5, 1964.

GOL'DSTEIN, I.P.; DOLYANIKY, N.N.; SHAMAGINA, I.P.; GUR'YANOVA, Ye.N.;
PANOV, Ye.K.; STAVOKHOTOVA, N.A.; KOCHESHKOV, K.A.

Organotin complex compounds of a new type. Dokl. AN SSSR 153
(MIRA 18:8)
no.4:880-883 Ag '65.

1. Chlen-korrespondent AN SSSR (for Kocheshkov).

SOROKINA, R.S.; PANOV, Ye.M.; KOCHESHKOV, K.A.

Synthesis of styrenes with fluorine in the vinyl group and
organometallic substituents in the ring. Zhur. ob. khim.
35 no.9:1625-1628 S '65. (MIRA 18:10)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

PANOV, Ye.M.; SOROKINA, R.S.; KOCHFESHKOV, K.A.

Fluorine-containing divinylbenzenes. Zhur. ob. khim. 25
no.8:1426-1429 Ag '65. (MIRA 18:2

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni
I.Ya. Karpova, Moskva.

ZEMLYANSKIY, N.N.; LEBEDEVICH V.N.; ~~FANOV, Ye. M.~~; KOCHESHKOV, K.A.

Synthesis of plumbones of the $(\text{RCCOPbAr}_2)_2\text{O}$ type. Zhur. ob.
khim. 35 no.5:843-845 My '65. (MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

ZEMLYANSKIY, N.N.; FANOV, Ye.M.; SHAMAGINA, O.P.; KOCHFESHKOV, K.A.

Synthesis of tin oxanes $\text{RCOO}[\text{Sn}(\text{C}_4\text{H}_9)_2\text{O}]$ OCR. Zhur. ob. khim.
35 no.6:1029-1031 Je '65. (MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova.

LODOCHNIKOVA, V.I.; FANOV, Ye.M.; KOCHESHKOV, K.A.

Para-iodophenyl derivatives of the aryl lead triester type.
Zhur. ob. khim. 34 no.12:4022-4024 D '64 (MIRA 18:1)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova i Sverdlovskiy gosudarstvennyy meditsinskiy institut.

KOTON, M.M.; KOCHESHKOV, K.A.; GORSHKOVA, I.A.; DOKUKINA, A.F.; PANOV, Ye.M.

Copolymerization of α,β,β -halo-substituted p-divinylbenzenes with styrene. Dokl. AN SSSR 158 no.5:1120-1122 0 '64.

(MIRA 17:10)

1. Institute vysokomolekulyarnykh soyedineniy AN SSSR, Leningradskiy politekhnicheskoy institut im. M.I.Kulinina i Fiziko-khimicheskoy institut im. L.Ya.Karpova. 2. Chleny-korrespondenty AN SSSR (for Koton, Kocheshkov).

LODOCHNIKOVA, V.I.; PANOV, Ye.M.; KOCHESHKOV, K.A.

Reactivity of ArPbX_3 compounds. Reaction with (C_6H_5) Sb.
Zhur. ob. khim. 34 no. 3:946-949 Mr '64. (MIRA 17:6)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova i Sverdlovskiy
gosudarstvennyy meditsinskiy institut.

ZEMLYANSKIY, N. N.; GOL'DSHTEYN, I. P.; GUR'YANOVA, Ye. N.; PANOV, Ye. M.; SLOVOKHOTOVA, N. A.; KOCHESHKOV, K. A.

Structure of compounds with a stannoxane bond studied by means of dipole moments and infrared spectra. Dokl. AN SSSR 156 no. 1:131-134 My '64. (MIRA 17:5)

1. Fiziko-khimicheskiy institut im. L. Ya. Karpova. 2. Chlen-korrespondent AN SSSR (for Kocheskhov).

ZEMLYANSKIY, N.N.; PANOV, Ye.M.; SLOVOKHOTOVA, N.A.; SHAMAGINA, O.P.;
KOCHESHKOV, K.A.

Stepped formation of compounds with a stanno-oxane bond and reactive
terminal groups. Dokl. AN SSSR 149 no.2:312-315 Mr '63.
(MIRA 16:3)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-korres-
pondent AN SSSR (for Kocheshkov).

SLOVOKHOTOVA, N.A.; FAYZI, N.A.; ZEMLYANSKIY, N.N.; PANOV, Ye.M.;
KCHESHKOV, K.A.

Structure of some organotin salts of carboxylic acids. Zhur.
ob. khim. 33 no.8:2610-2613 Ag '63. (MIRA 16:11)

LODOCHNIKOVA, V.I.; PANOV, Ye.M.; KOCHESHKOV, K.A.

Para-anisil derivatives of the ArPbI_3 class. Zhur.ob.khim. 33 no.4:
1199-1201 Ap '63. (MIRA 16:5)

(Anisil) (Lead organic compounds)

S/020/63/149/002/015/028
B108/B186

AUTHORS: Zemlyanskiy, M. N., Panov, Ye. M., Slovokhotova, N. A.,
Shamagina, O. P., Kocheshkov, K. A., Corresponding Member
AS USSR

TITLE: Stepwise formation of compounds with a stannoxane bond and
reactive end groups

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 2, 1963, 312 - 315

TEXT: It was found in earlier work (K. A. Kocheshkov et al. Izv. AN SSSR, OKhN, 1961, no. 12, 2255) that the hydrolysis of the tin salts of organic acids with a definite quantity of water in the presence of diazo alkanes proceeds according to the equation



This process makes it possible to obtain linear compounds with active end groups. It is shown here how, by varying the quantity of water and diazo methane, it is possible to terminate the progression of reactions
monomer \longrightarrow dimer \longrightarrow tetramer \longrightarrow octamer \longrightarrow hexadecamer at any stage.

Card 1/2

Stepwise formation of compounds...

S/020/63/149/002/015/028
B108/B186

The infrared spectra of the compounds with a stannoxane bond were examined, the molecular weight, the temperatures of boiling, melting, and decomposition were determined. At slightly increased temperatures (40 - 45° C) it is possible to obtain stannoxanes also of higher molecular weight. There are 1 figure and 1 table.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: November 22, 1962

Card 2/2

ZEMYLANSKIY, N.N.; PANOV, Ye.M.; KOCHESHKOV, K.A.

Dialkyltin. Dokl. AN SSSR 146 no.6:1335-1336 0 '62. (MIRA 15:10)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-
korrespondent AN SSSR (for Kocheshkov).
(Tin)

VASIL'YEVA, V.N.; KOCHESHKOV, K.A.; TALALAYEVA, T.V.; PANOV, Ye.M.;
KAZENNIKOVA, G.V.; SOROKINA, R.S.; PETRIY, O.P.

Dipole moments and structure of some fluorine-substituted
styrenes. Dokl. AN SSSR 143 no.4:844-846 Ap '62. (MIRA 15:3)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-
korrespondent AN SSSR (for Kocheshkov).

(Styrene--Dipole moments) (Fluorine compounds)

PANOV, Ye.M.; SOROKINA, R.S.; ZIMIN, A.V.; KOCHESHKOV, K.A.

Fluorine-containing divinylbenzenes. Dokl. AN SSSR 145 no.5:
1066-1070 '62. (MIRA 15:8)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-
korrespondent AN SSSR (for Kocheshkov).
(Styrene polymers) (Fluorine compounds)

S/020/62/146/006/010/020
B106/B186

AUTHORS: Zemlyanskiy, N. N., Panov, Ye. M., Kocheshkov, K. A.,
Corresponding Member AS USSR

TITLE: Dialkyl tin

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 6, 1962, 1335-1336

TEXT: As no reliable method has so far been worked out for the synthesis of tin dialkyls, the data published on these compounds differ greatly. Referring to a reaction made by G. Wittig, F. I. Meyer, G. Lange (Ann., 571, 167 (1951)) the authors of this article succeeded in synthesizing analytical-grade di-n-butyl tin and diethyl tin by reacting a suspension of anhydrous SnCl_2 in a 1:4 mixture of ether and benzene with an ether solution of n-butyl lithium and with ethyl lithium, respectively (reaction temperature, -10°C ; molar ratio between SnCl_2 and alkyl lithium = 1:2). Di-n-butyl tin is thus obtained in a yield of 63.7% and in the form of a dark cherry-red oil readily soluble in hexane, benzene, toluene, ether, chloroform, and carbon tetrachloride, but poorly soluble in alcohol and

Card 1/2

Dialkyl tin .

S/02C/62/146/006/010/020
B106/B186

acetone. Diethyl tin is obtained similarly in a yield of 40.8% in the form of a dark, cherry-red oil which is as soluble as di-n-butyl tin. Both tin dialkyls oxidize in air and more quickly in solution. In the case of di-n-butyl tin, a white product is formed, which, together with HCl, gives $(C_4H_9)_2SnCl_2$, m.p. 42-43°C. The oxidation of diethyl tin is more complex. ✓

Di-n-butyl tin reacting with bromine in CCl_4 gives $(C_4H_9)_2SnBr_2$, m. p. 18.5-19.5, in a quantitative yield. Di-n-butyl tin heated in a sealed ampoule with an argon atmosphere begins to precipitate metallic tin at 230°C. The tin dialkyls synthesized here are polymers. Their molecular weights were determined by cryoscopy and ebullioscopy and were found to be 1780 and 1633, respectively, for diethyl tin, and 1921 and 1745, for di-n-butyl tin. There is 1 table. The most important English-language references are: T. Harada, Sci. Papers Inst. Phys. Chem. Res. (Tokyo), 35, 290 (1939); S.F.A. Kettle, J. Chem. Soc., 1959, 2936.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: July 9, 1962
Card 2/2

PANOV, Ye.M.; ZEMLYANSKIY, N.N.; KOCHESHKOV, K.A.

Study of the element-oxane bond. Lead oxanes. Dokl. AN SSSR 143
no.3:603-605 Mr '62. (MIRA 15:3)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-
korrespondent AN SSSR (for Kocheshkov).
(Lead organic compounds)

140183
S/020/62/145/005/014/020
B106/B144

11.2.214
AUTHORS:

Panov, Ye. M., Sorokina, R. S., Zimin, A. V., and Kocheshkov, K. A., Corresponding Member AS USSR

TITLE:

Fluorine-containing divinyl benzenes

PERIODICAL:

Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1068-1070

TEXT: The synthesis of two hitherto unknown divinyl benzenes containing fluorine is described: p- α , β -difluoro- β -chlorovinyl styrene and bis- α , β -difluoro- β -chlorovinyl benzene. In both cases the initial material, β -lithium- α , β -difluoro- β -chlorostyrene, was produced as described earlier (Izv. AN SSSR, OKhN, 1961, 532) by a 20-30 min action of butyl lithium on p-bromo- α , β -difluoro- β -chlorostyrene in absolute ether at -70°C. This new organolithium compound gives all reactions of ordinary aromatic lithium compounds feasible at -70°C. Action of acetaldehyde at -70°C yields p- α , β -difluoro- β -chlorovinyl phenyl methyl carbinol (42% yield, b. p. 107 - 116°C (4 mm), n_D^{20} 1.5455, d_4^{20} 1.2800). This intermediate product is dehydrated in vacuo by heating with potassium bisulfate to 2.0°C.

Card 1/3

Fluorine-containing divinyl ...

S/O20/62/145/005/014/020
B106/B144

p- α,β -difluoro- β -chlorovinyl styrene (b. p. 66 - 69°C (2 mm), n_D^{20} 1.5650, d_4^{20} 1.2563) forms in 50% yield. Polymerization of this product (benzoyl peroxide as a starter, 2.5 hrs heating over a water bath) gave a solid, transparent product insoluble in organic solvents and swelling slightly in benzene and xylene. To produce bis- α,β -difluoro- β -chlorovinyl benzene, p-lithium- α,β -difluoro- β -chlorostyrene was mixed with trifluoro chloroethylene immediately after its production at -75°C. Data of the reaction product: b. p. 100 - 105°C (5 mm), n_D^{20} 1.5430, d_4^{20} 1.4240. This product polymerizes in the presence of benzoyl peroxide at 100°C at about the same rate as styrene with formation of a solid, transparent polymer which, unlike polystyrene, is not soluble on heating in aromatic hydrocarbons and swells in them only slightly. The polymer is stable on heating in air up to 210°C. The two compounds described exemplify the possible combinations of the groups $-\text{CH}=\text{CH}_2$, $-\text{CF}=\text{CFCl}$, $-\text{C}(\text{CF}_3)=\text{CH}_2$, etc. synthesized by the authors in fluorine-containing divinyl benzenes. There is 1 figure.

Card 2/3

Fluorine containing divinyl ...

S/020/62/145/005/014/020
B106/B144

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: May 11, 1962

Card 3/3

PANOV, Ye.N.

Occurrence of birds on Lake Khanka. Ornitologiya no. 7:483-484, '65.
(MIRA 18:10)

TIKHOMIROV, N.I.; KOZUBOVA, L.A.; TIKHOMIROV, I.N.; KAZITSYN, Yu.V.;
KHARKEVICH, D.S.; PANOY, Ye.H.; RUDAKOVA, Zh.N.; PAVLOVA,
V.V.; ROZINOV, M.I.; ALEKSANDROV, G.V.; SHATKOV, G.A.;
SOLOV'YEV, N.S.

[Intrusive complexes of Transbaikalia] Intruzivnye komplekсы
Zabaikal'ia. [By] N.I.Tikhomirov i dr. Moskva, Izd-vo
"Nedra," 1964. 214 p. (MIRA 17:7)

PANOV, Ye.N.

Statistical study of the interdependence of the content and the
volume of the separation of plagioclase in igneous rocks. Trudy
VSEGEI 96:165-185 '63. (MIRA 17:9)

PANDY, Ye.N.

Let's preserve the player-entertainers' tradition
Okur. prin. na lart. Vost. no. 1992-1995 1997.

1. Zapovednik "Ded. vopros" i "Ded. vopros" 1997.
Sobremennye sobremennye AN 1997.

PANOV, Ye.N.

Systematic position of the Ussuri ringed plover *Charadrius hiaticula*
placidus Gray et Gray (based on ecologic data). Zool. zhur. 42
no.10:1546-1553 '63. (MIRA 16:12)

1. Far Eastern Branch of the Academy of Sciences of U.S.S.R.,
Preserve "Kedrovaya Pad", Marine Territory, Khasan district,
station Primorskaya.

ORLOV, V.N.; ORLOV, O. Y.; PANOV, Ye.N.; CHAYKOVSKIY, Yu.V.; YABLOKOV, A.V.;
GONGHARENKO, Ye.H.; GORBUNOVA, V.G.; KONOPLYANNIKOV, A.K.;
KUDRYASHOV, Yu.B.; REUK, V.D.; SHUENIKOVA, Ye.A.; TARUSOV, B.H.;
PETRUSEVICH, Yu.M.; IVANOV, I.I.; GAPONENKO, V.I.; ANTONOV, V.A.;
VOROB'YEV, L.N.; BURLAKOVA, Ye.V.; BURDIN, K.S.; PARKHOMENKO, I.M.;
AGAVERDIYEV, A. Sh.; DOSKACH, Ya. Ye.; TARUSOV, B.N.

Brief news. Biol. MOIP. Otd. biol. 70 no.6:158-171 N-D '65.
(MIRA 19:1)

PANOV, Ye.N.

Some crystalloptical characteristics of quartz in granitoids
of northeastern Transbaikalia. Zap. Vses. min. ob-va 92 no.6:
664-673 '63. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut
(SVEGEI), Leningrad.

PANOV, Ye.N.

Territorial relations of sandpipers in flight. Ornithologia
no.6418-423 '63. (MIRA 1706,

PANOV, Ye.N.

Feeding habits of some species of limicoline birds. Zool. zhur.
43 no.1:89-97 '64 (MIRA 17:7)

1. Far Eastern Branch of the Academy of Sciences of the U.S.S.R.,
Vladivostok, Preserve "Kedrovaya Pad", station Primorskaya,
Khasan District.

Решение, Ye. V.

White Legat. 2, a new form of the protocol of the Soviet
Union. Bibliologika no. 64, 79. 197. MIRA 17. 10.

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.; PAVLOVA, V.V.; PANOV, Ye.N.

Mesozoic metalliferous intrusions in the Olekma-Nerchugan region.
Sov.geol. 5 no.9:61-77 S '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Olekma Valley--Rocks, Igneous)
(Nerchugan Valley--Rocks, Igneous)

PANOV, Yevgeniy

Photographic studio in the woods. Sov.foto 21 no.8:33-35 az '61.
(MIRA 14:8)

(Photography of birds)

PANOV, Yevgeniy

Pictures taken with the "Tair" camera. Sov.foto 20 no.1:
34-35 Ja '60. (MIRA 13:5)
(Photography of birds) (Cameras)

52715-65 EWT(1)/EWP(m)/EWA(d)/EPR/FCS(k)/EWA(1) Pd-1 WW/RM

ACCESSION NR: AF5014097

UR/0055/65/000/003/0083/0087

533.65

25

24

8

AUTHOR: Panov, Yu. A.; Khudyakov, G. Ye.

TITLE: Investigation of base pressure behind axisymmetrical blunt bodies of small length-to-diameter ratio in a supersonic stream

SOURCE: Moscow, Universitet. Vestnik. Seriya 1. Matematika, mekhanika, no. 3, 1965, 83-87

TOPIC TAGS: base pressure, supersonic speed, blunt body

ABSTRACT: The dependence of base pressure on the free stream Mach number (M_∞) and on the curvature of the leading part of blunt axisymmetrical bodies of small length-to-diameter ratio was experimentally investigated in the range of $M = 1.5$ to 3.0 and $Re \sim 1.5 \times 10^5$. The curvature was characterized by the coefficient

$$\bar{r} = \frac{r}{R} = 0; 0.12; 0.32; 0.64; 1.0$$

(R = radius of model; r = curvature radius). The pressure distributions

Card 1/2

L 52715-65

ACCESSION NR: AP5014097

on the base and side surfaces were measured with mercury pressure gauges. The experimental error did not exceed 10%. For hemispherical bodies M_1 (Mach number on the surface of the model before the base cross section) differed substantially from M_∞ . When M_∞ increases to infinity, M_1 approaches a value of 3. It is evident that for hypersonic speeds the value of the base pressure coefficient also attains a constant value. The influence of the rounded part on the base pressure coefficient is sufficiently important at small values of M_∞ . When M_∞ equals 3 and r changes from 0 to 1, the base pressure coefficient changes by only 10%. At larger M_∞ values and for bodies with a length-to-diameter ratio $\lambda = 1.5$, the curvature has no marked effect on the base pressure coefficient. Orig. art. has: 3 formulas and 5 figures. [AC]

ASSOCIATION: Otdel aeromekhaniki NII mekhaniki MGU (Department of Aeromechanics, NII mekhaniki, MGU)

SUBMITTED: 12Feb64

ENCL: 00

SUB CODE: AS, ME

NO REF SOV: 004

OTHER: 008

ATD PRESS: 4012

224
Cord 2/2

ACC NR: AR6033805 SOURCE CODE: UR/0124/66/000/007/B052/B052

AUTHOR: Panov, Yu. A. ; Shvets, A. I.

TITLE: Experimental investigation of flow in stagnant zones

SOURCE: Ref. zh. Mekhanika, Abs. 7B387

REF SOURCE: Vestn. Kiyevsk. politekhn. in-ta. Ser. teploenerg., no. 2, 1965, 161-170

TOPIC TAGS: flow structure, boundary layer, model, angle of attack, stagnant zone, supersonic flow

ABSTRACT: To explain the flow structure, a visual representation was made of the surface streamlines near step, fastened to a flat sharp plate, with the M number of the advancing flow equal to 3.01. The boundary layer on the plate was turbulent. The surface of the model was coated with oil mixed with carbon black prior to the test. A diagram of the flow around the step is presented; equations are given describing the flow in this zone. Results are presented of studies of the supersonic flow around blunt bodies at $M = 1.5$ to 3.0 at angles of attack ranging from 0 to 40 degrees. The tests results included spectra of the flow around

Card 1/2

ACC NR: AR6033805

models, the shape of the stagnant zone, as well as the dependence of the occurrence of separation on the lateral surface and the dependence of the coefficient of the bottom pressure on the M number of the advancing flow and the angle of attack. It was found that hysteresis takes place during the occurrence of separation on the lateral surface of the reverse cones. B. I. Bakum. [Translation of abstract]

SUB CODE: 13, 20/

Card 2/2

L 21765-66 EWP(m)/EWA(h)/EWP(k)/EWT(d)/EWT(l)/EWT(m)/ETG(m)-6/EWA(d)/EWA(l)/EWP(w)/

ACC NR: AP6010849 EWP(v) IJP(c) SOURCE CODE: UR/0421/66/000/001/0121/0125
EM/WW

AUTHOR: Voytenko, D. M. (Moscow); Zubkov, A. I.; (Moscow); Panov, Yu. A. (Moscow)

ORG: none

TITLE: Supersonic gas flow around a cylindrical obstacle on a plate 26 81 B

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1966, 121-125

TOPIC TAGS: supersonic aerodynamics, shock wave, shock wave analysis, flow field, flow separation, boundary layer, wind tunnel, supersonic shock wave

ABSTRACT: An experimental investigation of supersonic flows around a cylindrical obstacle mounted on a flat plate is described with the purpose of studying: shock wave-boundary layer interaction, flow separation, pressure distribution, and flow configurations near cylinders of various diameters and heights. The investigation was carried out by means of a supersonic wind tunnel at $M = 2.5$ and $Re = 1.85 \times 10^7$. Toepler's method was used for photo registering the visualized flow pattern. The experimental data were processed on a "STRELA" computer. A photograph of the flow field around a cylinder 12 mm in diameter and 15 mm high is presented and analyzed. The results presented in graphs seem to be in good agreement with available data. A schematic diagram of the flow field which was observed is presented (see Fig. 1). It is concluded that the results of the investigations of the three-dimensional structure of flow configurations near a cylindrical obstacle on a plate

Cord 1/2

L 21765-66

ACC NR. AP6010849

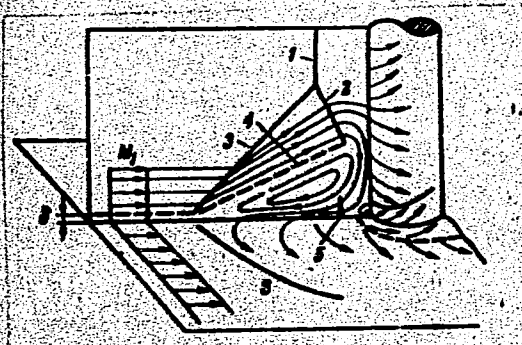


Fig. 1. Flow pattern

S - Line of separation; 1 - detached shock wave; 2 - straight shock wave; 3 - oblique shock wave; 4 - stagnation zone boundary; 5 - minimum-pressure zone.

produced by supersonic free flows obtained here may be useful for further investigation of separation of a three-dimensional boundary layer and flows in separation zones. Orig. art. has: 7 figures and 2 formulas. [AB]

SUB CODE: 20/ SUBM DATE: 05Aug65/ ORIG REF: 001/ OTH REF: 004/ ATD PRESS: 4227

Card 2/2 PB

L 20760-56 EWP(m)/EWT(1)/EWA(d)/EWA(1) WW

ACC NR: AP6007549

SOURCE CODE: UR/0198/66/002/001/0099/0195

AUTHOR: Panov, Yu. A. (Moscow); Shvets, A. I. (Moscow)

ORG: none

TITLE: Separation of the turbulent boundary layer in a supersonic flow 48
B

SOURCE: Prikladnaya mekhanika, v. 2, no. 1, 1966, 99-105

TOPIC TAGS: supersonic flow, turbulent boundary layer, boundary layer separation

ABSTRACT: Experimental data on the interaction between shock waves and the turbulent layer in a supersonic flow is analyzed. A single relationship for determining the critical value of the shock intensity at which the separation of the boundary layer occurs, is obtained, in relation to the Mach number of the oncoming flow. The cases of an incident shock wave (see Fig. 1) and a supersonic flow around a vertical shoulder (Fig. 2) are considered; 1 - incident shock wave, 2 - shock causing separation of the boundary layer, 3 - stagnation zone, 4 - expansion-shock fan, 5 - reflected shock wave (boundary layer shown by dotted line); δ is the boundary-layer thickness. The mechanisms of the flow separation in both cases are described, the effects of flow and shock parameters (density, velocity, Mach number, pressure gradient, viscosity)

Card 1/2

L 20760-66

ACC NR: AP6007549

are discussed, and a formula for the critical pressure drop is derived by using

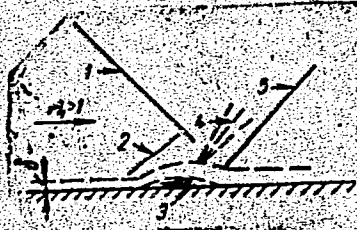


Fig. 1

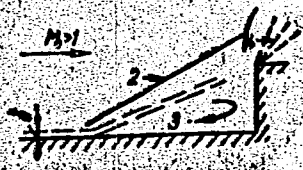


Fig. 2

dimensional analysis. The effects of Reynolds and Mach numbers on the flow in the stagnation zone and on the separation phenomenon are analyzed. Orig. art. has: 8 figures and 14 formulas. [03]

SUB CODE: 20/ SUBM DATE: 15Apr65/ ORIG REP: 003/ DTH REP: 015/ ATD RPRESS:

4224

Cord 2/2

L 08196-07 ENT(d)/ENT(l)/ENP(m)/ENT(m)/ENP(w)/ENP(v)/ENP(x) IJP(c) Wn/12
 ACC NR: AP6020123 SOURCE CODE: UR/0421/66/000/004/0185/0188

AUTHOR: Panov, Yu. A. (Moscow)

ORG: none

TITLE: Interaction between the spatial discontinuity of the condensation and the turbulent boundary layer

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 4, 1966, 185-188

TOPIC TAGS: turbulent boundary layer, supersonic flow

ABSTRACT: The experimental investigations were carried out with turbulent flow on a plate at a Mach number $M_1 = 3.11$. The initiators of the discontinuities in the condensation were cylinders of different diameters and height, attached to the plate. The distance of the axis of the cylinders from the leading edge of the plate was 140 mm. The Reynolds number $R = u_1 l_0 / \nu_1$ was equal to 1.87×10^6 , where u_1 and ν_1 are the velocity and the kinematic viscosity of the flow. A schematic diagram of the problem is shown in Fig. 1. The experimental data are plotted in a series of curves and are compared with existing literature data. Orig. art. has: 8 formulas and 6 figures.

Card 1/2

L 08196-67

ACC NR: AF6030123

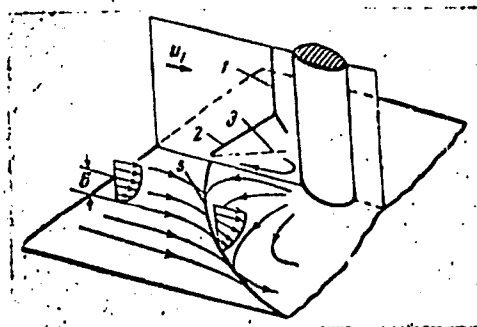


Figure 1.

SUB CODE: 20/ SUBM DATE: 03Mar66/ ORIG REF: 005/ OTH REF: 006

Cord 2/2 dda

ACC NR: AP6021549

SOURCE CODE: UR/0198/66/002/006/0105/0111

AUTHOR: Panov, Yu. A. (Moscow); Savets, A. I. (Moscow)

ORG: Scientific Research Institute for Mechanics, MGU (Nauchno-issledovatel'skiy institut mekhaniki MGU)

TITLE: Investigation of base pressure near the trailing edge of axisymmetric bodies in supersonic flow

SOURCE: Prikladnaya mekhanika, v. 2, no. 6, 1966, 105-111

TOPIC TAGS: supersonic aerodynamics, supersonic flow, base pressure, wind tunnel

ABSTRACT: The results of an experimental investigation of the base pressure near the trailing edge of axisymmetric models of small aspect ratio with nose-section bluntness of various shapes are reported. The experiments were carried out in order to establish and to clarify the dependence of the base pressure and other flow parameters near the trailing edge of models in supersonic flow, on the blunt shape of the forward section, in a supersonic wind tunnel with Mach numbers ranging from 1.5 to 3.5. Cylindrical models with removable elliptical and plane front sections were used. The experimental setup and the apparatus used are described briefly. The results are presented in graphs and seem to be in good agreement with theoretical data obtained

Card 1/2

ACC NR: AP6021549

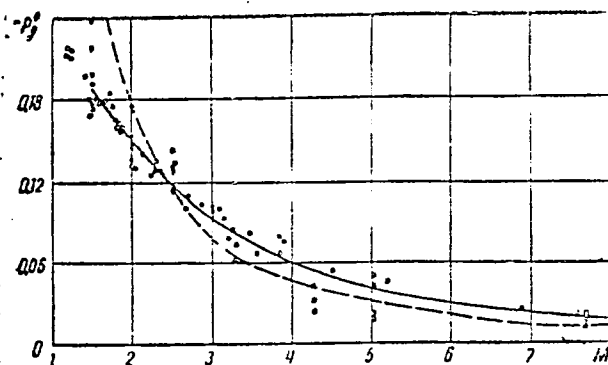


Fig. 1. Base pressure coefficient versus M

using the Chapman-Rorst model.
The dependence of the base pressure coefficient on M and a photograph of the flow pattern are given in Figs. 1 and 2. Orig. art. has: 6 figures and 6 formulas. [AB]

SUB CODE: 20/ SUBM DATED: 1971
ORIG REF: 004/ 0701100
Card 1/1

S: 5 533



Fig. 2. Flow pattern

1 - external flow; 2 - mixing; 3 - wake of toroidal vortex; 4 - trailing shock; 5 - cylindrical flow into the stagnation zone; 6 - spreading zone; 7 - incident flow.